



National Aeronautics and Space Administration
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Virginia

Inside Wallops

Volume XX-00

Number: 05

Feb. 7, 2000

Japanese - U.S. Satellite Ushers in Golden Era of X-Ray Astronomy

Astro-E, the Japanese-U.S. X-ray spacecraft scheduled for a Feb. 8 launch, will showcase an entirely new technology in X-ray detection that not only will serve as a test bed for future missions but also will earn the distinction of being the coldest known object in space.

“This new mission allows us to apply a piece of whiz-bang new technology to the exploration of the Universe,” said Dr. Alan N. Bunner, Science Director of NASA’s Structure and Evolution of the Universe program.

The new instrument is the X-ray Spectrometer (XRS), developed jointly by NASA’s Goddard Space Flight Center and Japan’s Institute of Space and Astronautical Science (ISAS). The XRS measures the heat created by

Kelley, XRS Principal Investigator at Goddard.

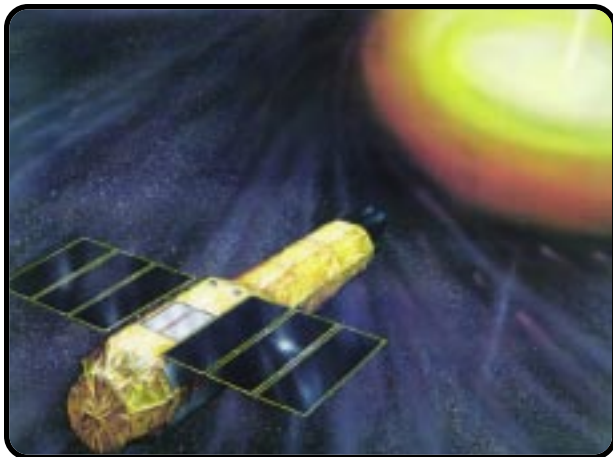
Astro-E’s targets include clusters of galaxies, supermassive black holes, neutron stars, supernova remnants, stellar coronae of stars 10,000-times more active than our Sun and a study of the history of how chemicals are made throughout the Universe.

Astro-E is primarily a spectroscopy mission, which means the satellite’s instruments will study the “colors” of X-ray light, much like a prism breaks visible light into the colors of the rainbow. While the recently launched Chandra X-ray Observatory excels in producing X-ray images, Astro-E excels in producing spectra. In this regard, Astro-E complements Chandra, analyzing the light that Chandra sees and determining the temperature, velocity and composition of the gas producing those X-rays.

Along with the XRS are four X-ray Imaging Spectrometer instruments, a collaboration among Japanese universities and institutions and the Massachusetts Institute of Technology Center for Space Research and the Hard X-Ray Detector, built by the University of Tokyo and ISAS.

Astro-E will be launched on an M-V rocket from the Kagoshima Space Center, located on the southern tip of the Japanese island of Kyushu. The observatory’s expected mission lifetime is five years. Astro-E will attain a near-Earth circular orbit of approximately 341 miles (550 kilo-meters). Its payload weighs 3,630 pounds (1,650 kilograms), and measures 20.8 x 17.28 x 6.72 feet (6.5 x 5.4 x 2.1 meters).

More information on the Astro-E mission can be found on the Internet at: http://heasarc.gsfc.nasa.gov/docs/astroe_lc/



Artist's Impression of Astro-E

individual X-ray photons, as opposed to converting X-rays to electrical charges and then collecting that charge, which is the mechanism in other X-ray detectors.

Using this new technique, it is possible to measure the energies of individual X-rays with a precision approximately 10 times greater than with previous X-ray sensors. To sense the heat of a single photon, however, the XRS detector must be cooled to an extremely low temperature, only about -460 degrees Fahrenheit, essentially making it the coldest object in space.

“This increased precision for measuring X-rays should allow fundamental breakthroughs in our understanding of essentially all types of X-ray emitting sources, especially material very close to black holes and the X-ray emitting gas in the vast spaces between the individual galaxies that make up clusters of galaxies,” said Dr. Richard

Student Payload Launched

A NASA Orion sounding rocket was successfully launched at 10:25:01z, Jan. 30, 2000 from the Poker Flat Research Range, AK.

The single-stage rocket carried a student-built payload from the University of Alaska, which included a telemetry transmitter and onboard computer as well as a 3-axis magnetometer, 3-axis accelerometer and temperature probes.



Orion Launch

The payload, which flew to an altitude of nearly 79 kilo-meters, was the first step in developing and validating

a student-built standardized payload bus to support future student-built scientific payloads. Dr. Joe Hawkins of the University of Alaska was the principal investigator.

February is Black History Month

NASA Delays Launch of the HETE-2 Satellite

In order to perform additional environmental testing, NASA has decided to delay the High Energy Transient Explorer-2 (HETE-2) launch until the mid-May time frame.

When the decision was made the HETE-2 satellite was at Vandenberg Air Force Base in California being readied for shipment to Kwajalein. After the decision, the spacecraft was sent back to the Massachusetts Institute of Technology in Boston for additional testing. For more on HETE-2, go to: <http://space.mit.edu/HETE/>

Morning Coffee

All Wallops employees (civil service and contractor) are invited to an informal morning coffee Feb. 15 from 8 to 9 a.m. in the cafeteria. Members of the senior staff will be available to answer questions and talk to employees individually from 8 to 8:30 a.m. An open forum will be held from 8:30 to 9 a.m. to discuss the NASA budget, the White House Launch Range Study, the ISO Audit, and Mission 2005 Status.

Winter Has Arrived

by Ted Wilz, Senior Meteorologist

After enjoying very mild temperatures in November and December, winter winds churned up some cold weather in January.

Temperatures during January were actually just a bit above normal. The first of the month temperatures were well above normal, a bit like the previous two months. By the latter half of January, the winter chill we had hoped to avoid arrived.

The high temperature for January also established a new record high for the date when the mercury hit 65 degrees on Jan. 13. A new record high of 62 degrees also was recorded on Jan. 10. During the first 13 days of January the temperature reached at least 60 degrees on six of those days.

Then on Jan. 14, the party was over when much colder air arrived and pretty much stayed with us for the rest of the month. Although no new record lows were set, there were five days during this period when the daily high temperature remained in the 20s. The coldest temperature for the month was a reading of 12 degrees on the morning of Jan. 19.

The latter part of January also brought the first taste of wintry precipitation to hit the area when two snowstorms



blanketed most of Delmarva in snow on Jan. 20 and 26.

Total snowfall accumulation for the month was 3.5 inches, which is one-half inch above the monthly average for this area. A two-inch accumulation on Jan. 26 was our heaviest snowfall, but significantly larger amounts fell in areas farther from the coast during the

same snowfall. Our proximity to the warmer coastal waters once again kept much of our precipitation to rain or a mix of rain and snow.

Well folks, take heart, March is coming. The coldest period of the year along the Eastern Shore typically ends during March.

Temperatures start out around 50 degrees at the beginning of March, climbing to the upper 50s by the end of the month. Low temperatures average in the low to mid 30s at the beginning of the month and increase to around 40 degrees as April approaches. The record high for March is 86 degrees set on March 13, 1990. The all time low for the month is 14 degrees set on March 4, 1996.

Springtime showers and thunderstorms also accompany the arrival of spring and milder temperatures. Average rainfall for March is typically about 3 inches, making it the wettest month of the year. A combination of late winter storms and springtime showers create measurable precipitation on an average of nine days during March. The good news is that only about half of an inch of snowfall usually occurs.

Even as “ole man winter” begins to ease his grip on the area, be mindful that winter weather is still a viable treat, as evidenced by the March 1993 “Storm of the Century” that affected the area late in the month.

NASA College Scholarship

The NASA College Scholarship Fund, Inc., a Texas nonprofit corporation was established to award scholarships to qualified dependents of NASA and former NASA employees. James A. Michener, noted Pulitzer Prize winning author, established the scholarship fund.

Six scholarships will be awarded in the amount of \$2,000 each. The renewable scholarship is for a maximum of \$8,000 over 6 calendar years. Applicants must be pursuing a course of study in the science or engineering fields that will lead to a recognized undergraduate degree at an accredited college or university in the United States.

All completed application forms must be mailed to the Johnson Space Center by March 31, 2000. Application forms are available in the Wallops Public Affairs Office.

FEEA Scholarship

The Federal Employees Education and Assistance Fund, a Combined Federal Campaign charity, is accepting applications through March 31 for scholarships for the school year that starts in the autumn. Scholarships ranging between \$300 and \$1500 are available to federal and postal employees and family members. For an application form, send a self-addressed stamped business-sized envelope to FEEA Scholarship, 8441 W. Bowles Ave., Suite 200, Littleton, CO, 80123-9501.

NARFE Scholarship

The National Association of Retired Federal Employees (NARFE) offers scholarships to children and grandchildren of its members, in a program administered by Federal Employees Education and Assistance Fund. NARFE membership is open to active duty employees as well. Application forms will be published in the February, March and April Issues of NARFE’s magazine, Retirement Life. For information on joining NARFE, call (800) 627-3394.

Congratulations to the winners in the Super Bowl Chili Cook-off:



First Place for the second year in a row went to Jose’ Gutierrez from NOAA

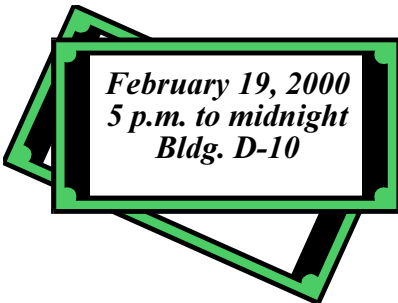
Second Place went to Missy Mason, whose husband, Tony, also works for NOAA. Third Place went to Mike Martone, PSL.

Get ready, get set for another exciting NASCAR Winston Cup Daytona 500

Mark you calendars now to join us at the Rocket Club on Feb. 20 to watch the race. Doors open at 11 a.m.

“Heritage and Horizon: The African American Legacies and Challenges of the 21st Century”

The Wallops Black History Club presents an evening of dinner and entertainment.



For tickets contact Karen Downing, x2163; Sandra Banks, x2526 or Rebecca Beach, x1559.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees.

Editor: Betty Flowers
Photography: Optical Section
Printing: Printing Management Office